

CORRECTED VERSION

(19) World Intellectual Property Organization  
International Bureau



(43) International Publication Date  
30 March 2006 (30.03.2006)

PCT

(10) International Publication Number  
WO 2006/033666 A2

(51) International Patent Classification:  
B01L 3/00 (2006.01)

(21) International Application Number:  
PCT/US2005/009333

(22) International Filing Date: 22 March 2005 (22.03.2005)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:  
60/555,590 22 March 2004 (22.03.2004) US  
PCT/US2004/33581 12 October 2004 (12.10.2004) US

(71) Applicant (for all designated States except US): THE  
REGENTS OF THE UNIVERSITY OF CALIFORNIA  
[US/US]; 1111 Franklin Street, 12th Floor, Oakland, CA  
94607-5200 (US).

(71) Applicants and

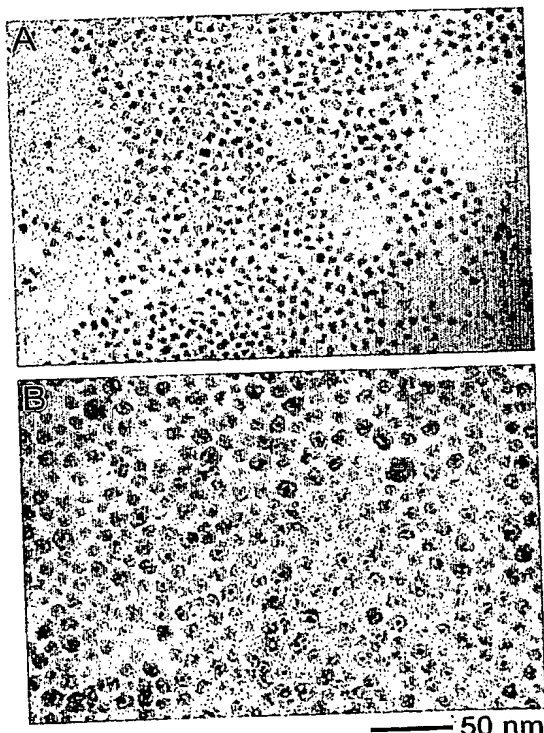
(72) Inventors: ALIVISATOS, A., P. [US/US]; 5941 Estates  
Drive, Oakland, CA 94611 (US). YIN, Yadong [CN/US];  
5550 Central Avenue, Apt. 24, El Cerrito, CA 94530  
(US). RIOUX, Robert, M. [US/US]; 1626B Berkeley  
Way, Berkeley, CA 94703 (US). SOMORJAI, Gabor, A.  
[US/US]; 665 San Luis Road, Berkeley, CA 94707 (US).

(74) Agent: NOLD, Charles, R.; Berkeley National Labora-  
tory, One Cyclotron Road, Berkeley, CA 94720 (US).

(81) Designated States (unless otherwise indicated, for every  
kind of national protection available): AE, AG, AL, AM,  
AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN,  
CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI,  
GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE,  
KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD,  
MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG,  
PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY,  
TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU,  
ZA, ZM, ZW.

[Continued on next page]

(54) Title: NANOREACTORS AND METHOD OF MAKING



(57) Abstract: Described herein are nanoreactors having vari-  
ous shapes that can be produced by a simple chemical process.  
The nanoreactors described herein may have a shell as thin as 0.5  
nm and outside diameters that can be controlled by the process of  
making and have a nanoparticle enclosed therein. The nanoreac-  
tors have catalytic activity and may be used to catalyze a variety  
of chemical reactions.

WO 2006/033666 A2



(84) **Designated States** (*unless otherwise indicated, for every kind of regional protection available*): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

**Published:**

— *without international search report and to be republished upon receipt of that report*

(48) **Date of publication of this corrected version:**

3 August 2006

(15) **Information about Correction:**

see PCT Gazette No. 31/2006 of 3 August 2006

*For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.*